Service Schematics



Introduction

RM-78

Exploded view and component disposal

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder", "Frequency band table" or "Antenna switch table".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

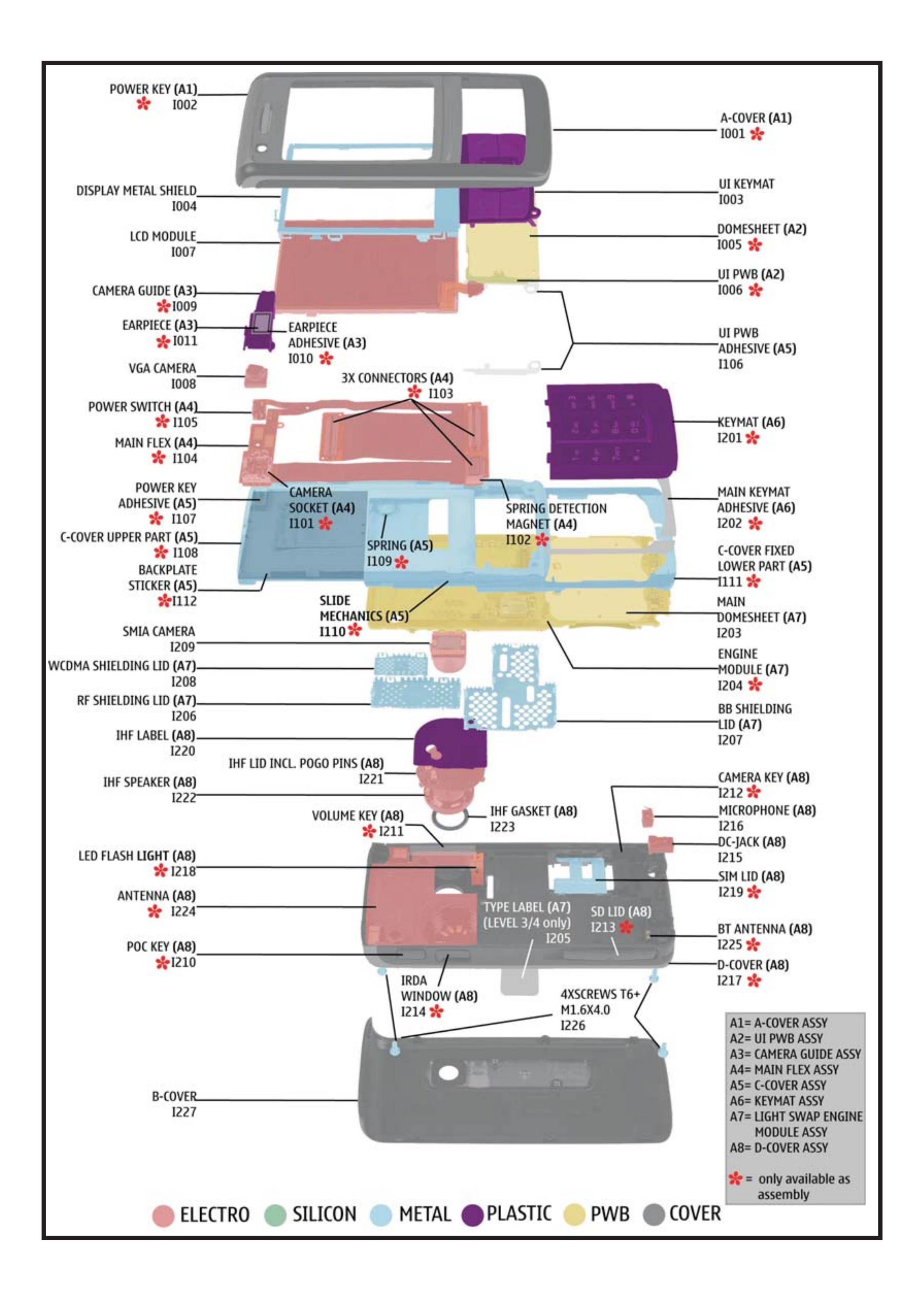
Nokia repair SW	:	Phoenix version 2005.12.5.90
Oscilloscope	:	Fluke PM 3380A/B
Spectrum Analyzer	:	Advantest R3162 with an analog probe
RF-Generator / GSM Tester	:	Rhode & Schwarz CMU 200
Multimeter	:	Fluke 73 Series II

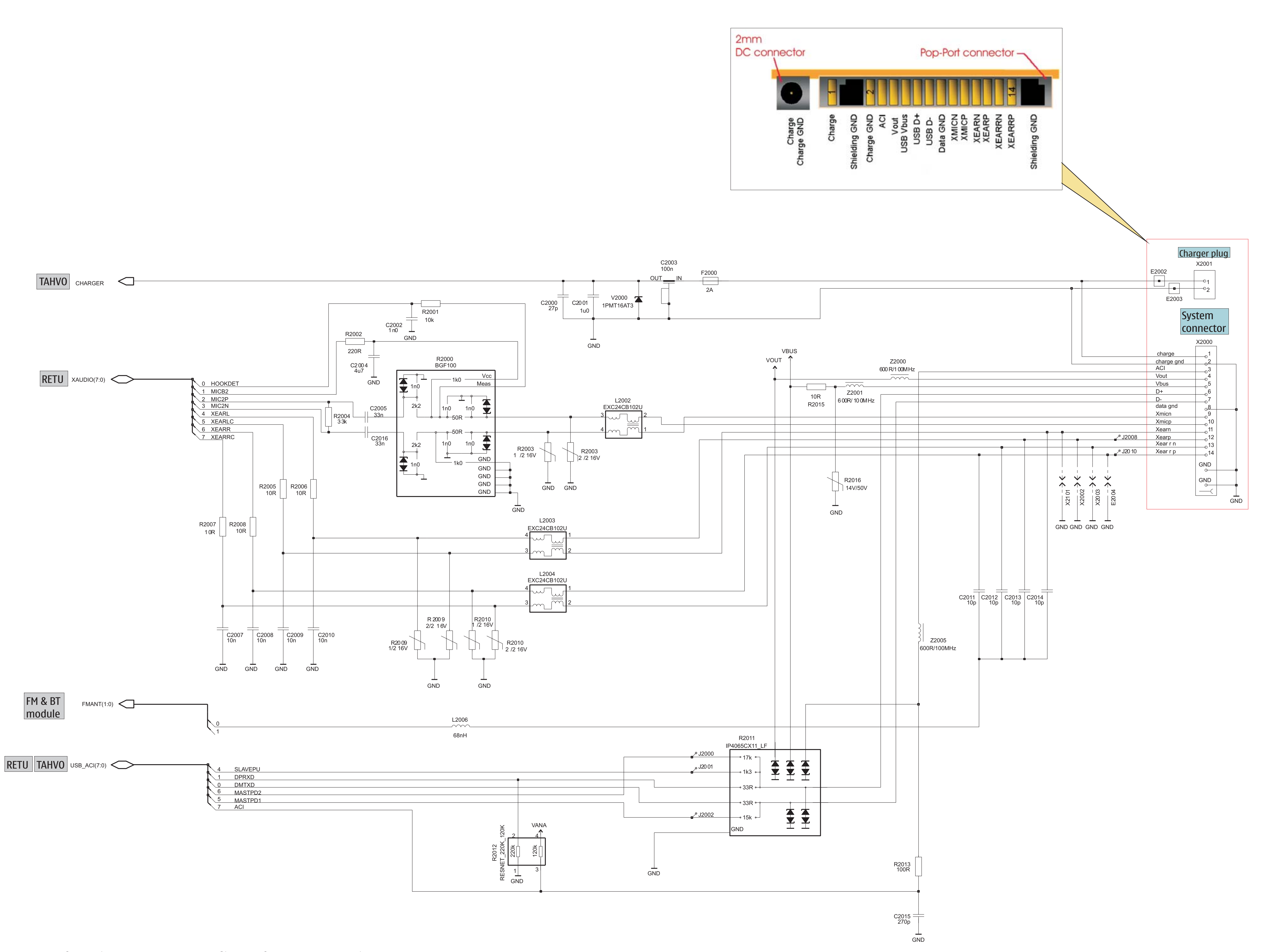
While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA should be notified in writing.

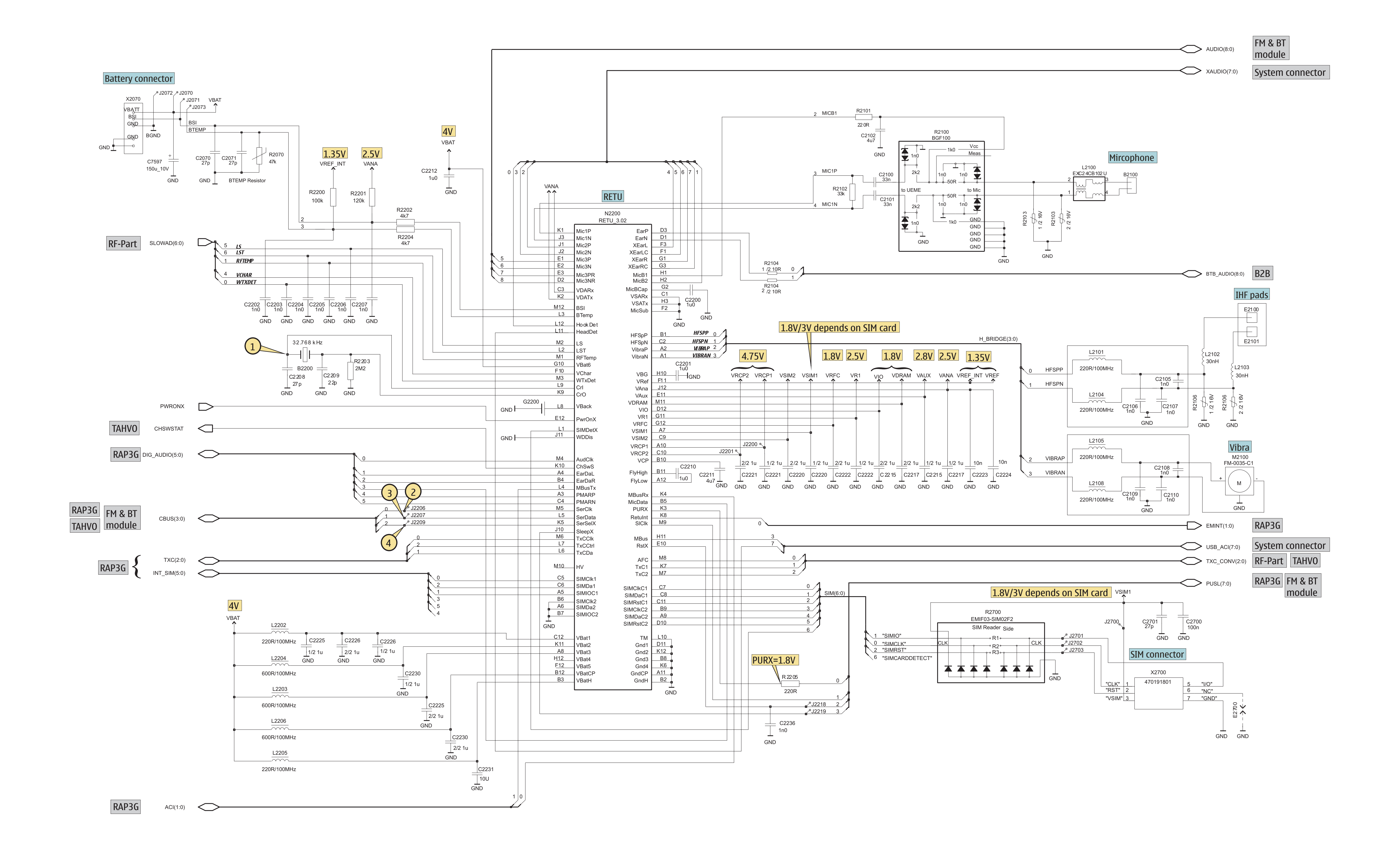
Please send E-Mail to: training.sace@nokia.com

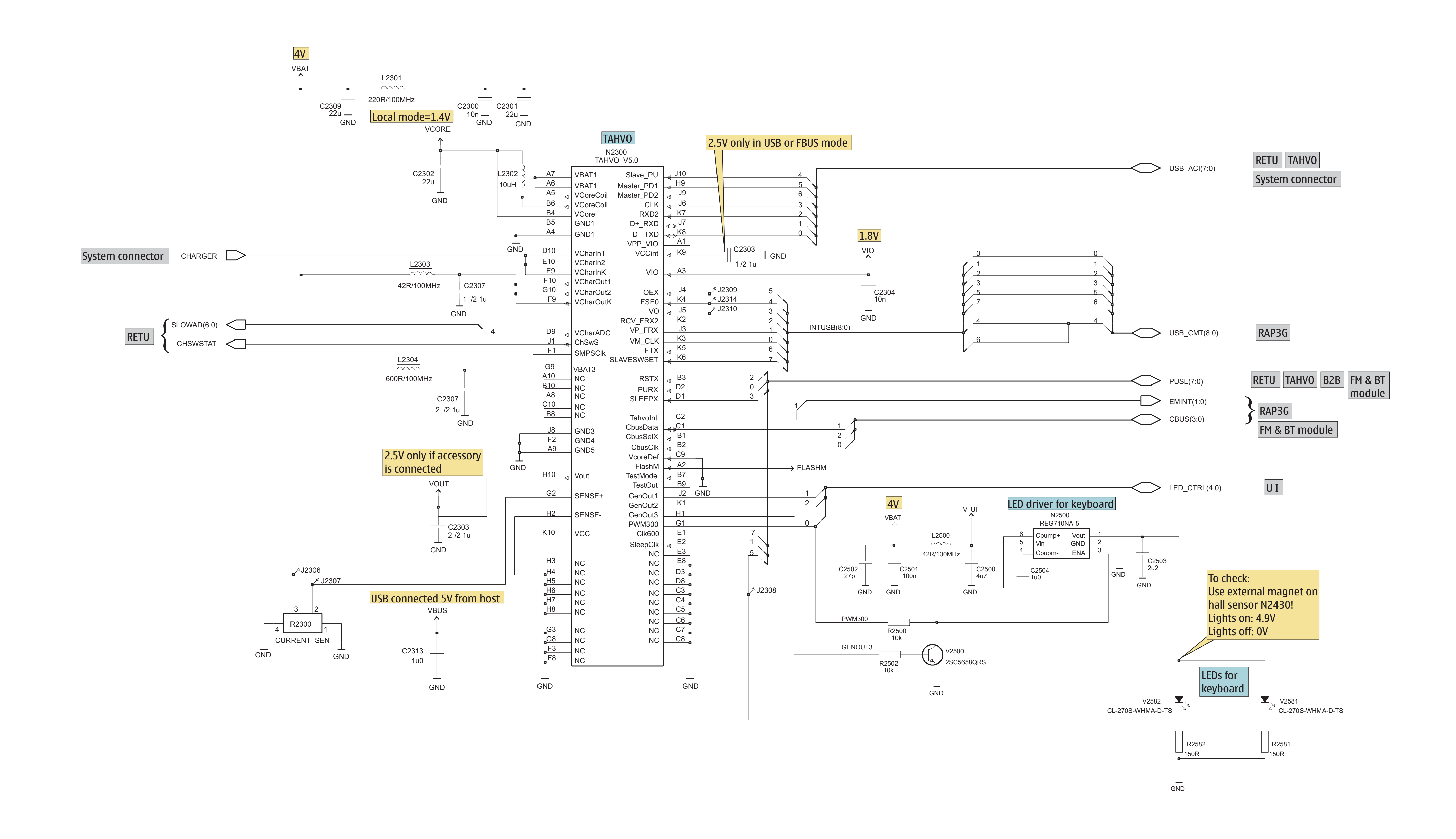


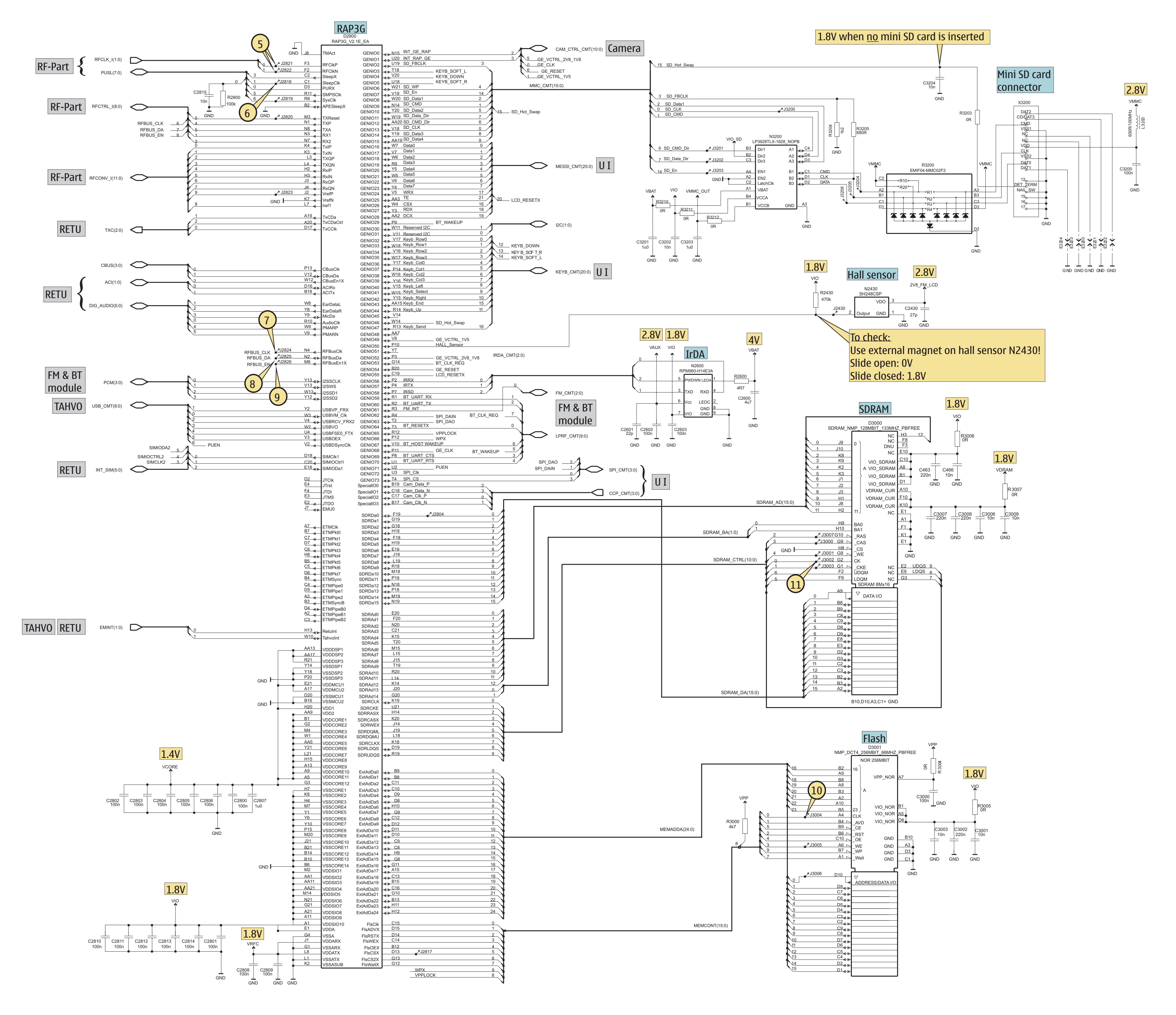
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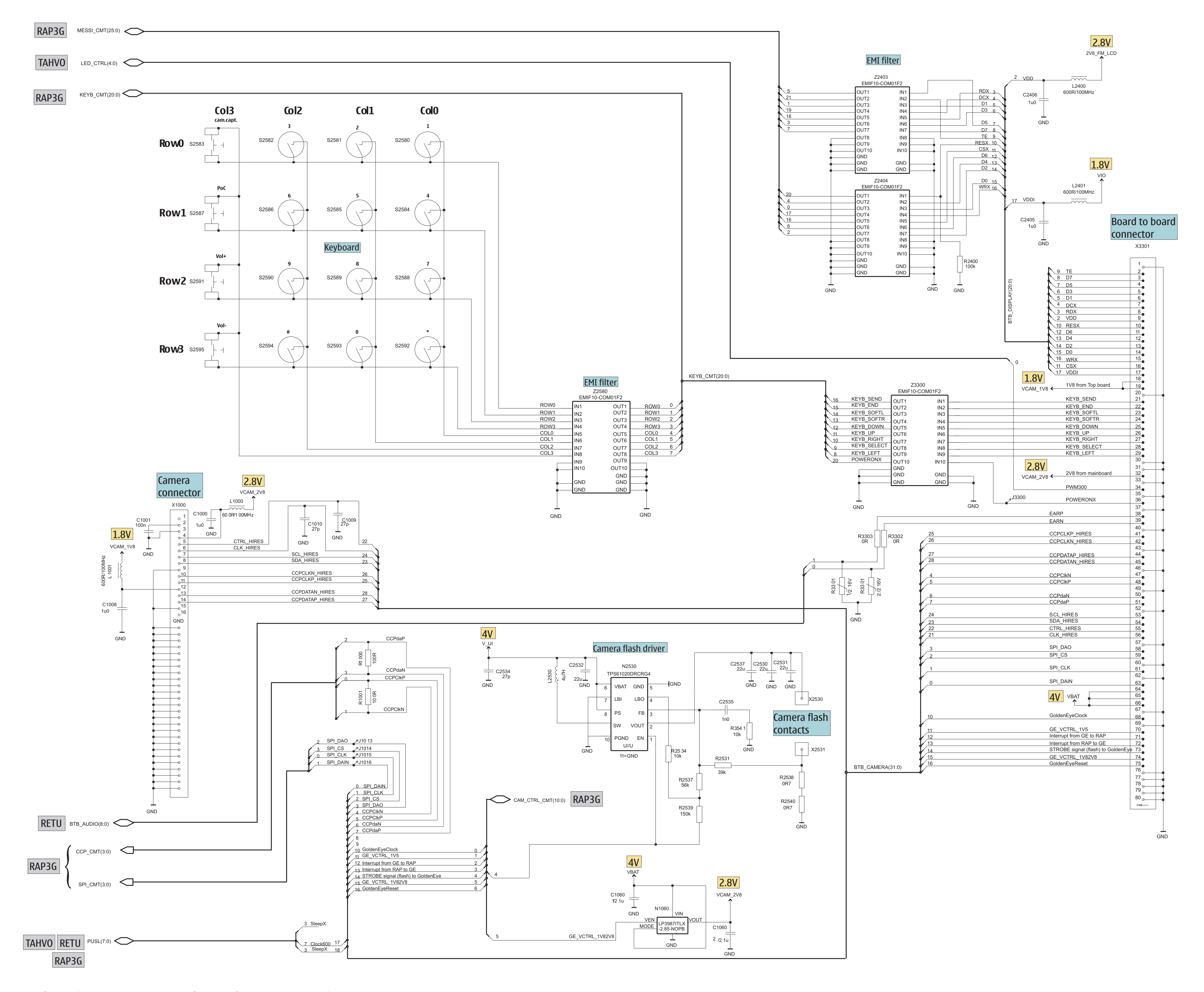

2mm
DC connector
Pop-Port connector
Charge
Charge GND
Charge
Shielding GND
Charge GND
ACI
Vout
USB Vbus
USB D+
USB D-
Data GND
XMICN
XMICP
XEARN
XEARP
XEARRN
XEARRP
Shielding GND
TAHVO
CHARGER
RETU
XAUDIO(7:0)
FM & BT module
FMANT(1:0)
RETU
TAHVO
USB_ACI(7:0)
Charger plug
System connector

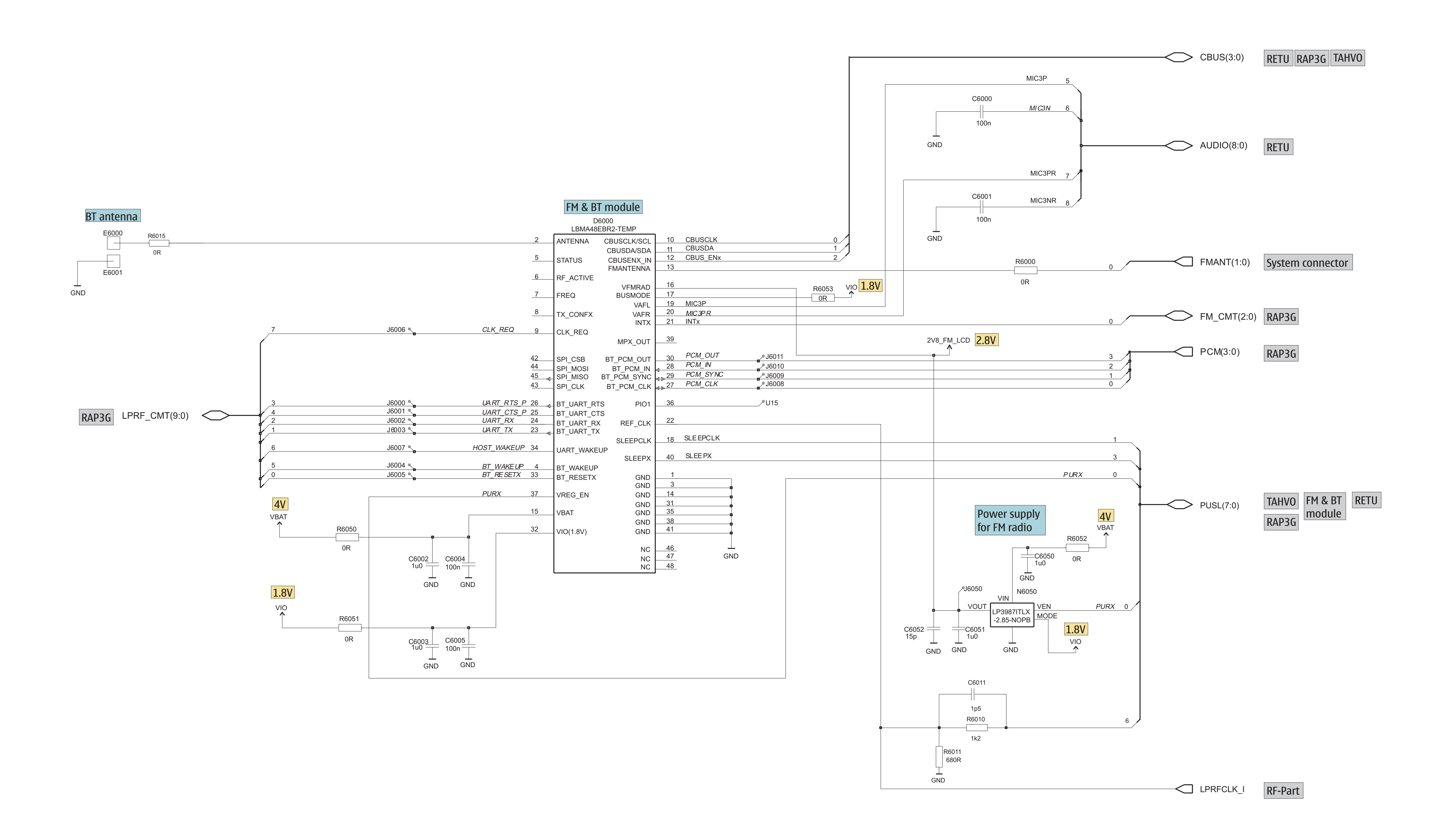

FM & BT module
System connector
Battery connector
RETU
Mircophone
RF-Part
B2B
IHF pads
1.8V/3V depends on SIM card
4.75V
1.8V
2.5V
2.8V
1.35V
4V
TAHVO
RAP3G
Vibra
PURX=1.8V
SIM connector
N2200
RETU_3.02
AUDIO(8:0)
XAUDIO(7:0)
BTB_AUDIO(8:0)
EMINT(1:0)
USB_ACI(7:0)
TXC_CONV(2:0)
PUSL(7:0)
SLOWAD(6:0)
PWRONX
CHSWSTAT
DIG_AUDIO(5:0)
CBUS(3:0)
TXC(2:0)
INT_SIM(5:0)
ACI(1:0)
H_BRIDGE(3:0)
SIM(6:0)


4V
VBAT
L2301
220R/100MHz
Local mode=1.4V
VCORE
TAHVO
N2300
TAHVO_V5.0
2.5V only in USB or FBUS mode
USB_ACI(7:0)
RETU
TAHVO
System connector
System connector
CHARGER
1.8V
VIO
RETU
SLOWAD(6:0)
CHSWSTAT
INTUSB(8:0)
USB_CMT(8:0)
RAP3G
PUSL(7:0)
RETU
TAHVO
B2B
FM & BT module
EMINT(1:0)
RAP3G
CBUS(3:0)
FM & BT module
FLASHM
LED_CTRL(4:0)
U I
2.5V only if accessory is connected
VOUT
4V
VBAT
LED driver for keyboard
N2500
REG710NA-5
V_UI
USB connected 5V from host
VBUS
R2300
CURRENT_SEN
To check:
Use external magnet on hall sensor N2430!
Lights on: 4.9V
Lights off: 0V
LEDs for keyboard
PWM300
GENOUT3
V2500
2SC5658QRS
V2582
CL-270S-WHMA-D-TS
V2581
CL-270S-WHMA-D-TS
R2582
150R
R2581
150R
GND

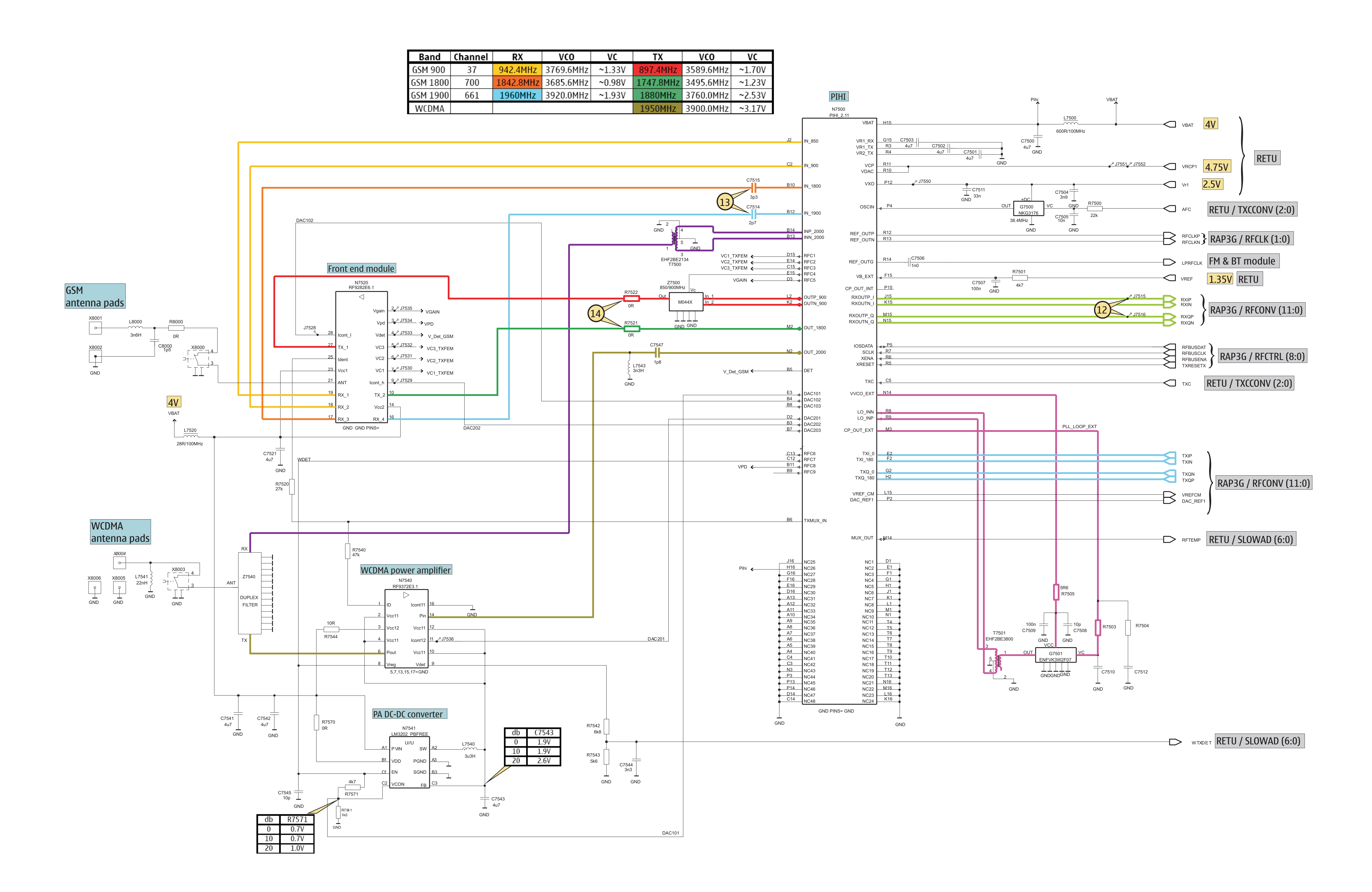


RAP3G
D2800
RAP3G_V2.1E_EA
RF-Part
RF-Part
RF-Part
RETU
RETU
FM & BT module
TAHVO
RETU
TAHVO
RETU
Camera
U I
U I
U I
FM & BT module
1.8V when no mini SD card is inserted
Mini SD card connector
2.8V
1.8V
Hall sensor
2.8V
To check:
Use external magnet on hall sensor N2430!
Slide open: 0V
Slide closed: 1.8V
2.8V
1.8V
IrDA
4V
SDRAM
1.8V
1.8V
Flash
1.8V
1.4V
1.8V
1.8V


RAP3G
MESSI_CMT(25:0)
TAHVO
LED_CTRL(4:0)
RAP3G
KEYB_CMT(20:0)
Col3
cam.capt.
Col2
Col1
Col0
Row0
Row1
Row2
Row3
PoC
Vol+
Vol-
Keyboard
EMI filter
Z2580
EMIF10-COM01F2
KEYB_CMT(20:0)
EMI filter
Z2403
EMIF10-COM01F2
Z2404
EMIF10-COM01F2
2.8V
2V8_FM_LCD
L2400
600R/100MHz
1.8V
VIO
L2401
600R/100MHz
Board to board connector
X3301
BTB_DISPLAY(20:0)
Z3300
EMIF10-COM01F2
1.8V
VCAM_1V8
1V8 from Top board
2.8V
VCAM_2V8
2V8 from mainboard
PWM300
POWERONX
EARP
EARN
Camera connector
X1000
2.8V
VCAM_2V8
1.8V
VCAM_1V8
4V
V_UI
Camera flash driver
N2530
TPS61020DRCRG4
Camera flash contacts
4V
VBAT
BTB_CAMERA(31:0)
RETU
BTB_AUDIO(8:0)
RAP3G
CCP_CMT(3:0)
SPI_CMT(3:0)
CAM_CTRL_CMT(10:0)
RAP3G
4V
VBAT
2.8V
VCAM_2V8
N1060
LP3987ITLX-2.85-NOPB
GE_VCTRL_1V82V8
TAHVO
RETU
PUSL(7:0)
RAP3G
SleepX
Clock600



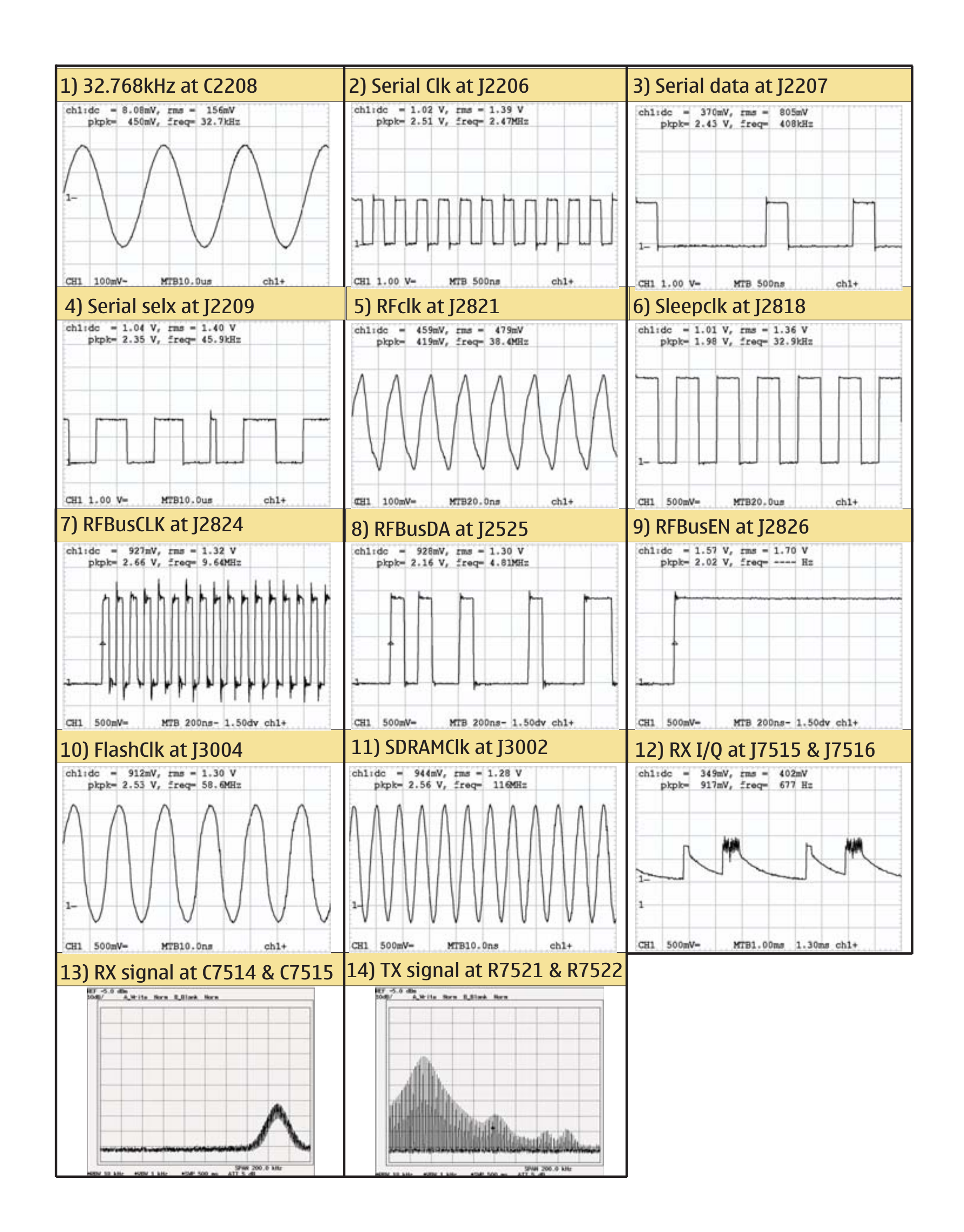
CBUS(3:0)
RETU
RAP3G
TAHVO
AUDIO(8:0)
RETU
FMANT(1:0)
System connector
FM_CMT(2:0)
RAP3G
PCM(3:0)
RAP3G
PUSL(7:0)
TAHVO
FM & BT module
RETU
RAP3G
LPRFCLK_I
RF-Part
BT antenna
FM & BT module
D6000
LBMA48EBR2-TEMP
RAP3G
LPRF_CMT(9:0)
Power supply for FM radio
N6050
LP3987ITLX -2.85-NOPB
2V8_FM_LCD
2.8V
1.8V
4V
VBAT
VIO
GND



Band	Channel	RX	VCO	VC	TX	VCO	VC
GSM 900	37	942.4MHz	3769.6MHz	~1.33V	897.4MHz	3589.6MHz	~1.70V
GSM 1800	700	1842.8MHz	3685.6MHz	~0.98V	1747.8MHz	3495.6MHz	~1.23V
GSM 1900	661	1960MHz	3920.0MHz	~1.93V	1880MHz	3760.0MHz	~2.53V
WCDMA					1950MHz	3900.0MHz	~3.17V

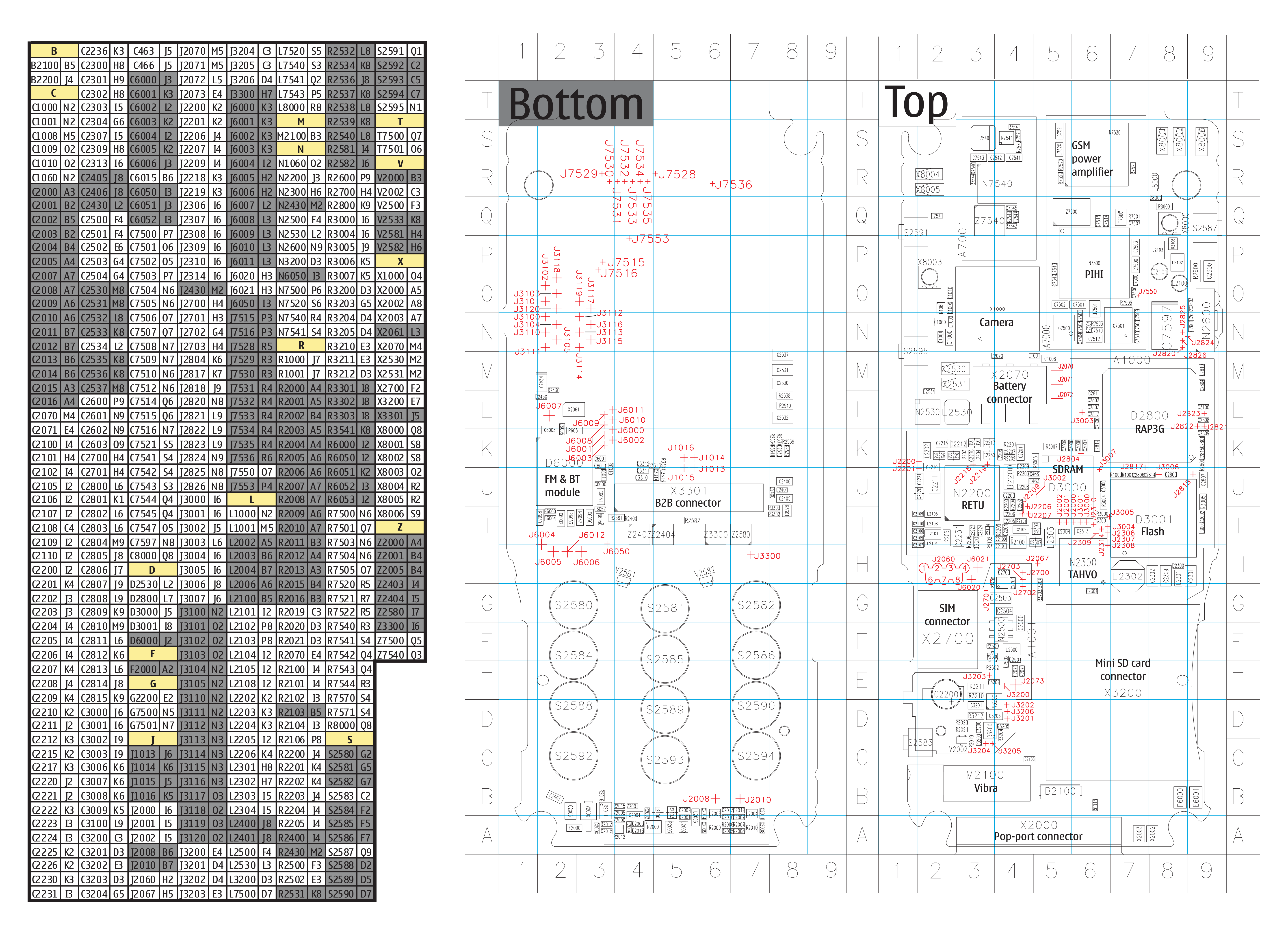
db	C7543
0	1.9V
10	1.9V
20	2.6V

db	R7571
0	0.7V
10	0.7V
20	1.0V



VIO=1.8V
V_UI=4V
2V8_FM_LCD=2.8V
2V8_FM_LCD=2.8V
VIO=1.8V
VBAT=4V
VIO=1.8V
VBAT=4V

VBAT=4V
VIO=1.8V
VAUX=2.8V
VREF=1.35V
VR1=2.5V
VAUX=2.8V
VANA=2.5V
VIO=1.8V
VDRAM=1.8V
VRCP1=4.75V
VRCP2=4.75V
VIO=1.8V
VREF=1.35V
PURX=1.8V
VBAT=4V
VCORE=1.4V
VIO=1.8V



B		C2236	K3	C463	J5	J2070	M5	J3204	C3	L7520	S5	R2532	L8	S2591	Q1
B2100	B5	C2300	H8	C466	J5	J2071	M5	J3205	C3	L7540	S3	R2534	K8	S2592	C2
B2200	J4	C2301	H9	C6000	J3	J2072	L5	J3206	D4	L7541	Q2	R2536	J8	S2593	C5
C		C2302	H8	C6001	K3	J2073	E4	J3300	H7	L7543	P5	R2537	K8	S2594	C7
C1000	N2	C2303	I5	C6002	I2	J2200	K2	J6000	K3	L8000	R8	R2538	L8	S2595	N1
C1001	N2	C2304	G6	C6003	K2	J2201	K2	J6001	K3	**M**		R2539	K8	**T**	
C1008	M5	C2307	I5	C6004	I2	J2206	J4	J6002	K3	M2100	B3	R2540	L8	T7500	Q7
C1009	O2	C2309	H8	C6005	K2	J2207	I4	J6003	K3	**N**		R2581	I4	T7501	O6
C1010	O2	C2313	I6	C6006	J3	J2209	I4	J6004	I2	N1060	O2	R2582	I6	**V**	
C1060	N2	C2405	J8	C6015	B6	J2218	K3	J6005	H2	N2200	J3	R2600	P9	V2000	B3
C2000	A3	C2406	J8	C6050	I3	J2219	K3	J6006	H2	N2300	H6	R2700	H4	V2002	C3
C2001	B2	C2430	L2	C6051	J3	J2306	I6	J6007	L2	N2430	M2	R2800	K9	V2500	F3
C2002	B5	C2500	F4	C6052	I3	J2307	I6	J6008	L3	N2500	F4	R3000	I6	V2533	K8
C2003	B2	C2501	F4	C7500	P7	J2308	I6	J6009	L3	N2530	L2	R3004	I6	V2581	H4
C2004	B4	C2502	E6	C7501	O6	J2309	I6	J6010	L3	N2600	N9	R3005	J9	V2582	H6
C2005	A4	C2503	G4	C7502	O5	J2310	I6	J6011	L3	N3200	D3	R3006	K5	**X**	
C2007	A7	C2504	G4	C7503	P7	J2314	I6	J6020	H3	N6050	I3	R3007	K5	X1000	O4
C2008	A7	C2530	M8	C7504	N6	J2430	M2	J6021	H3	N7500	P6	R3200	D3	X2000	A5
C2009	A6	C2531	M8	C7505	N6	J2700	H4	J6050	I3	N7520	S6	R3203	G5	X2002	A8
C2010	A6	C2532	L8	C7506	O7	J2701	H3	J7515	P3	N7540	R4	R3204	D4	X2003	A7
C2011	B7	C2533	K8	C7507	Q7	J2702	G4	J7516	P3	N7541	S4	R3205	D4	X2061	L3
C2012	B7	C2534	L2	C7508	N7	J2703	H4	J7528	R5	**R**		R3210	E3	X2070	M4
C2013	B6	C2535	K8	C7509	N7	J2804	K6	J7529	R3	R1000	J7	R3211	E3	X2530	M2
C2014	B6	C2536	K8	C7510	N6	J2817	K7	J7530	R3	R1001	J7	R3212	D3	X2531	M2
C2015	A3	C2537	M8	C7512	N6	J2818	J9	J7531	R4	R2000	A4	R3301	I8	X2700	F2
C2016	A4	C2600	P9	C7514	Q6	J2820	N8	J7532	R4	R2001	A5	R3302	I8	X3200	E7
C2070	M4	C2601	N9	C7515	Q6	J2821	L9	J7533	R4	R2002	B4	R3303	I8	X3301	J5
C2071	E4	C2602	N9	C7516	N7	J2822	L9	J7534	R4	R2003	A5	R3541	K8	X8000	Q8
C2100	I4	C2603	O9	C7521	S5	J2823	L9	J7535	R4	R2004	A4	R6000	I2	X8001	S8
C2101	H4	C2700	H4	C7541	S4	J2824	N9	J7536	R6	R2005	A6	R6050	I2	X8002	S8
C2102	I4	C2701	H4	C7542	S4	J2825	N8	J7550	O7	R2006	A6	R6051	K2	X8003	O2
C2105	I2	C2800	L6	C7543	S3	J2826	N8	J7553	P4	R2007	A7	R6052	I3	X8004	R2
C2106	I2	C2801	K1	C7544	Q4	J3000	I6	**L**		R2008	A7	R6053	I2	X8005	R2
C2107	I2	C2802	L6	C7545	Q4	J3001	I6	L1000	N2	R2009	A6	R7500	N6	X8006	S9
C2108	C4	C2803	L6	C7547	O5	J3002	J5	L1001	M5	R2010	A7	R7501	Q7	**Z**	
C2109	I2	C2804	M9	C7597	N8	J3003	L6	L2002	A5	R2011	B3	R7503	N6	Z2000	A4
C2110	I2	C2805	J8	C8000	Q8	J3004	I6	L2003	B6	R2012	A4	R7504	N6	Z2001	B4
C2200	I2	C2806	J7	**D**		J3005	I6	L2004	B7	R2013	A3	R7505	O7	Z2005	B4
C2201	K4	C2807	J9	D2530	L2	J3006	J8	L2006	A6	R2015	B4	R7520	R5	Z2403	I4
C2202	J3	C2808	L9	D2800	L7	J3007	J6	L2100	B5	R2016	B3	R7521	R7	Z2404	I5
C2203	J3	C2809	K9	D3000	J5	J3100	N2	L2101	I2	R2019	C3	R7522	R5	Z2580	I7
C2204	I4	C2810	M9	D3001	I8	J3101	O2	L2102	P8	R2020	D3	R7540	R3	Z3300	I6
C2205	I4	C2811	L6	D6000	J2	J3102	O2	L2103	P8	R2021	D3	R7541	S4	Z7500	Q5
C2206	I4	C2812	K6	**F**		J3103	O2	L2104	I2	R2070	E4	R7542	Q4	Z7540	Q3
C2207	K4	C2813	L6	F2000	A2	J3104	N2	L2105	I2	R2100	I4	R7543	Q4		
C2208	J4	C2814	J8	**G**		J3105	N2	L2108	I2	R2101	I4	R7544	R3		
C2209	K4	C2815	K9	G2200	E2	J3110	N2	L2202	K2	R2102	I3	R7570	S4		
C2210	K2	C3000	J6	G7500	N5	J3111	N2	L2203	K3	R2103	B5	R7571	S4		
C2211	J2	C3001	I6	G7501	N7	J3112	N3	L2204	K3	R2104	I3	R8000	Q8		
C2212	K3	C3002	I9	**J**		J3113	N3	L2205	I2	R2106	P8	**S**			
C2215	K2	C3003	I9	J1013	J6	J3114	N3	L2206	K4	R2200	J4	S2580	G2		
C2217	K3	C3006	K6	J1014	K6	J3115	N3	L2301	H8	R2201	K4	S2581	G5		
C2220	J2	C3007	K6	J1015	J5	J3116	N3	L2302	H7	R2202	K4	S2582	G7		
C2221	J2	C3008	K6	J1016	K5	J3117	O3	L2303	I5	R2203	J4	S2583	C2		
C2222	K3	C3009	K5	J2000	I6	J3118	O2	L2304	I5	R2204	J4	S2584	F2		
C2223	I3	C3100	L9	J2001	I5	J3119	O3	L2400	J8	R2205	I4	S2585	F5		
C2224	I3	C3200	C3	J2002	I5	J3120	O2	L2401	J8	R2400	I4	S2586	F7		
C2225	K2	C3201	D3	J2008	B6	J3200	E4	L2500	F4	R2430	M2	S2587	Q9		
C2226	K2	C3202	E3	J2010	B7	J3201	D4	L2530	L3	R2500	F3	S2588	D2		
C2230	K3	C3203	D3	J2060	H2	J3202	D4	L3200	D3	R2502	E3	S2589	D5		
C2231	I3	C3204	G5	J2067	H5	J3203	E3	L7500	D7	R2531	K8	S2590	D7		